

License Plate Recognition

LICENSE PLATE RECOGNITION

PLATE REVIEW

PLATE # : KMK86F

STATE:

SAVE RECORD

NEXT IMAGE

PREVIOUS
IMAGE



FEATURES

Specialized algorithm rapidly locates license plate.
Character recognition automatically adjusts for variances between plate formats.

Robust analysis compensates for variances in camera positions and lighting levels.

Open systems approach

- Unix operating system
- ODBC compliant database
- TCP/IP
- Currently Red Hat Linux but will port to other Unix platforms (eg HP, Sun, Alpha)

Image Data

- Supports JPEG, TIFF, BMP, PNM formats.
- Recommended JPEG compression ratio 12:1.
- Recommended character height - 12 pixels.

BENEFITS

Major improvements in Violation Processing

- Reduction in manual errors
- Reduced employee fatigue
- Reduced workforce
- Reduced number of workstations
- Equals cost savings

Remote operations via Intranet/Internet allows flexible staffing policies

Integrates seamlessly with TDS violation enforcement systems

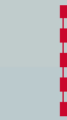
APPLICATIONS

Violation Processing Center
Parking Lot Security
Parking Lot Inventory System
License Plate Recognition
Security Access Control for gated communities

LICENSE PLATE RECOGNITION IMPLEMENTATION

Violation Processing Center

LPR Server (s)



VES Server



Images

License Plate Numbers

The Transport Data Systems License Plate Recognition (LPR) System provides a quick and efficient method for obtaining a machine readable license number from a high resolution image of the front or rear of a vehicle.

The LPR is a standalone application that runs under the Linux operating system.

In a typical operation the LPR server processes the images from a specified input directory, performs the LPR function, and places the resulting ASCII file with the license number in a specified output directory. The flexible design allows performance increases to be achieved through the addition of multiple servers, CPUs, et cetera.

The LPR application can also be used in a real time system to provide license plate numbers for entry into a license plate database. This is useful in situations where the license plates of vehicles entering a parking lot must be immediately available for further processing upon vehicle exit.

The accuracy of the LPR process is directly related to the pixel density of the image and the noise characteristics of the camera. The system works well with the 1.3 megapixel

camera system that is provided by TDS as part of its image capture system.

Please contact Transport Data Systems for more information.



1261C Rosecrans Street
San Diego, CA 92106

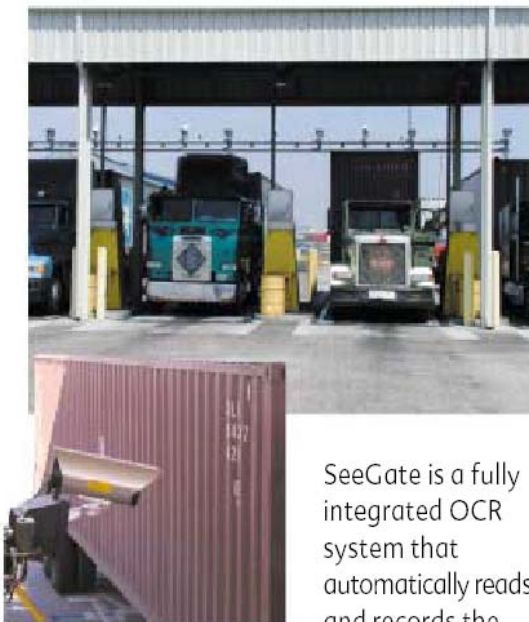
Phone/Fax: (619) 226-2534

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Automated Terminal Gate Portal and Pedestal OCR Systems



SeeGate is a fully integrated OCR system that automatically reads and records the

container ISO code number as the truck passes through a gate complex. The system may also include integrated modules for reading of the truck license plate number, the chassis number and/or the rear plate number.

The system is ideal either as a portal system or for terminal inbound and outbound gate gantries.

SeeGate system is a PC-Based container terminal gate processing system, ideally suited for recognition and recording of container code numbers together with the truck plate numbers, chassis numbers, and others.

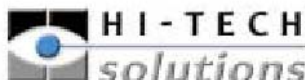
The SeeGate system includes proprietary integrated hardware and software systems. The system is based on a proprietary Container Code Recognition (CCR) software engine and utilizes rugged high-resolution camera systems with solid-state LED pulsed illuminators. The system can also be interfaced with the terminal load-lists and manifests for enhanced recognition performance.

SeeGate is designed to share the container/truck/chassis identifications with a central server system. This can be done either by external communication (RS232) or by application-to-application messages. The latter method is implemented by DDE messages that are sent after each identification cycle. One or more Client applications can intercept the DDE messages, for data recording and/or for further processing.

Benefits of SeeGate System:

- Automates data entry of container and chassis number
- Increase Terminal and Traffic Efficiency
- Provides Real-time data Processing
- Enables Security Surveillance
- Enhances terminal assets tracking and management

Sample applications: Portal installations, terminal gate systems, border and customs gates

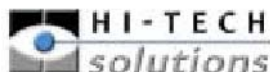
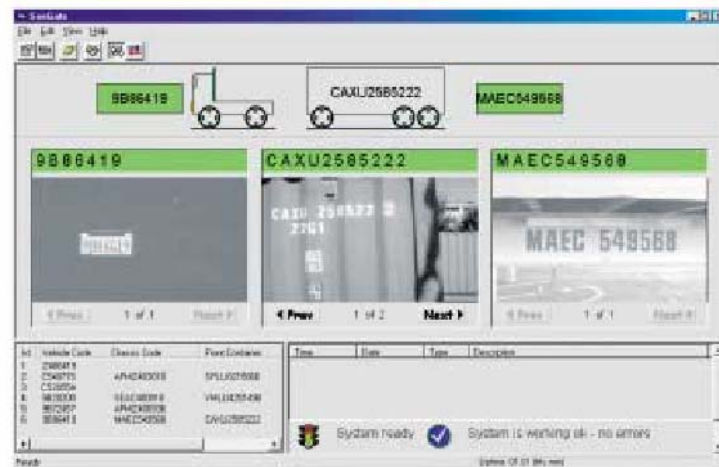




System Features

- Can Handle all standard size containers (20,40, 45, 20/20)
- Reads ISO 6346 formats including check digit verification
- Reads containers numbers from both sides as well as from rear
- Reads chassis numbers from both sides
- Stores images
- Captures information while truck is in motion
- Simple configurations
- Energy efficient
- Minimal equipment (1 PC per lane)
- Low maintenance
- Superior Reading Accuracy
- Seamless Performance Guarantee

Sample SeeGate Display for Container, Truck Plate and Chassis numbers



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The **IBIS** License Plate Recognition and Inventory System from **ALPHATECH**



Improves Customer Service

- Resolve lost tickets and fee disputes with factual evidence.
- LPR assists advanced payment systems (such as pay-on-foot and credit-card-express lanes)
 - Absence of human attendant increases the need for evidence to manage lost tickets and fee disputes.
- LPR with advanced payment systems are the next generation of parking control technology.

Increases Fee Collections

- Collect full fees for lost tickets.
- High-tech evidence quickly resolves and deters fraudulent fee claims.
- Tracks gray-listed customers (history of lost tickets, disputed fees or insufficients funds).



Improves Security

- Sounds alarm for black-listed customers (history of violence or police alert).
- Deters crime in parking facilities
 - Deters/helps catch vehicle theft: mismatched ticket alerts staff to take driver ID, etc. (according to your policies).
 - Deters/helps catch serial burglary. (Case: LPR identified unique vehicle present during break-ins.)

Offers Attractive Return on Investment (ROI)

- Even modest recovery of lost fees can generate high ROI. (Ask for an ROI analysis for your facility.)
- If you now use manual LPI: LPR reduces labor costs.



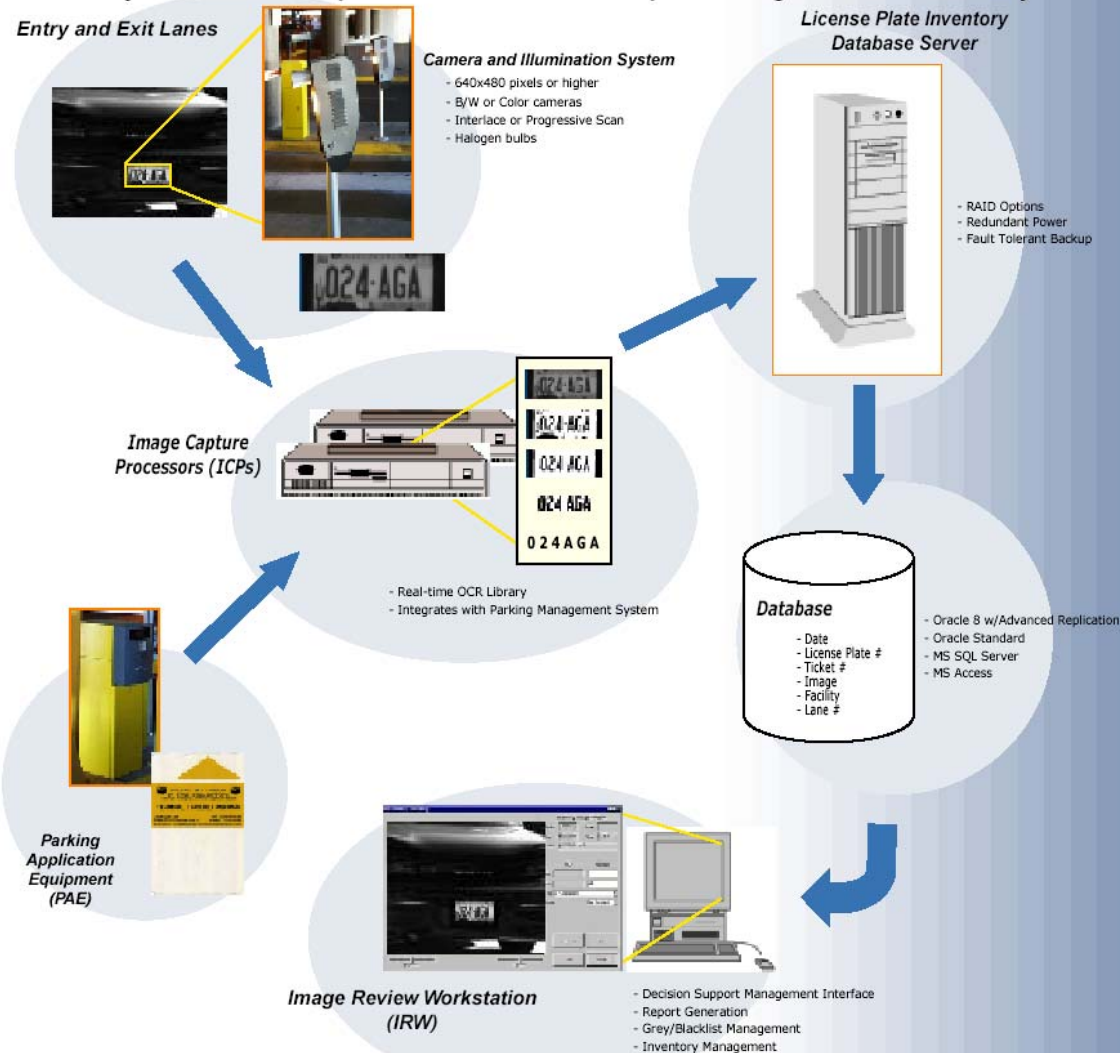
The Phoenix Sky Harbor International Airport (SHIA) Image Based Inventory System (IBIS) is the first and only fully operational License Plate Recognition System (LPR), nationally and internationally. Based upon ALPHATECH's advanced Optical Character Recognition (OCR) software, the digitized images are matched with the parking ticket information for additional verification. Real-time processing reduces in-lane customer queues.

- See *Parking Today*, February, 2000 for more information on IBIS.



ALPHATECH Inc
Intelligent Computer Vision Solutions

The IBIS Product from ALPHATECH combines video processing and information systems for a complete solution for license plate recognition and inventory



IBIS performs the following functions

On entry:

- Customer takes ticket; ticket info stored in database.
- Camera captures license plate image.
- OCR extracts license plate number in real-time.
- License plate info stored in database.

On exit:

- Camera captures license plate image.
- Real-time OCR processing of license plate image.
- Ticket info is read and stored in database.
- Check database that ticket and license plate match.
- Remove license plate from active inventory in database.

For More Information Please Contact Us:

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Security Systems & Traffic Management

License Plate Reader

Perceptics is the world leader in License Plate Reader Technology. Current LPR system read Latin (A-Z) and Korean (Hangul) letter and Arabic number (0-9); however, our LPR can be programmed to read any language or symbol in any alphanumeric combination or context on both retro and non-retro reflective plates. With milliseconds the LPR system locates, captures and identifies a vehicle's license plate data and makes a read decision. Our system's reliability and flexibility allow it to accommodate some of the most stringent needs in some of the worst conditions.

Features of our LPR technology include:

- Automatic and within milliseconds
- Reads accurately in most weather conditions
- Reads accurately at highway speeds
- Works 24 hours a day, 7 days a week

Applications

Perceptics LPR technology has been used around the world for a variety of applications including:

Security Imaging System Applications:

- International Border Control
- Security and Access Control
- Military Base Security
- Industrial and Nuclear Plant Security

Traffic Management Applications:

- Traffic Violation Enforcement
- Parking Lot Access Control
- Port and Shipping Traffic Management
- Electronic Toll Collection Enforcement



[License Plate Reading](#) | [Automated Container Identification](#) | [Under Vehicle Surveillance](#) | [Applications](#)

NORTHROP GRUMMAN
Information Technology

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- license plate reader, traffic management, access control -